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**MALCOLM
PIRNIE**

ARCS II



CONTRACT NO. 68-W9-0051

**LI TUNGSTEN-CAPTAIN'S COVE ADJUNCT
GLEN COVE, NEW YORK
Work Assignment No. 025-2L4L**

**SUPPLEMENTAL INVESTIGATION TO THE
STAGE Ia ARCHAEOLOGICAL SURVEY**

**Remedial Planning Activities at Selected
Uncontrolled Hazardous Substance Disposal Sites
USEPA Region II (NY, NJ, PR, VI)**

**Malcolm Pirnie, Inc.
104 Corporate Park Drive
White Plains, New York 10602**

August 1998

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**MALCOLM
PIRNIE**

ARCS II CONTRACT NO. 68-W9-0051

WORK ASSIGNMENT # 025-2L4L

SITE NAME: LI TUNGSTEN SITE - CAPTAIN'S COVE ADJUNCT
GLEN COVE, NEW YORK

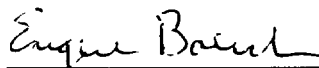
SUPPLEMENTAL INVESTIGATION TO THE
STAGE 1A ARCHAEOLOGICAL SURVEY

AUGUST 1998

CONTRACTOR QA/QC SIGN-OFF

Malcolm Pirnie, Inc., has reviewed this draft document in accordance with the contractor's ARCS II Quality Assurance Procedures Manual SOP (MP-PMOQA-006-12/90, Revision 1) and is submitting it to USEPA, Region II under Work Assignment No. 025-2L4L and Contract No. 68-W9-0051.

This document has not been approved by USEPA Region II and is not intended for release to the public.



Eugene Boesch
TASK LEADER

Date: 25 August 1998



Dennis G. McGrath
ARCS II PROGRAM/OPERATIONS MANAGER

Date: 25 August 1998

**SUPPLEMENTAL INVESTIGATION TO THE LI TUNGSTEN
STAGE Ia ARCHAEOLOGICAL SURVEY
LI TUNGSTEN - CAPTAIN'S COVE ADJUNCT
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1.0 INTRODUCTION

This report presents the results of archaeological monitoring of the mechanized excavation of seven test trenches at the Li Tungsten Site - Captain's Cove Adjunct Site (hereinafter referred to as the Captain's Cove study area) located in the City of Glen Cove, Nassau County, New York (Figures 1 and 2). The monitoring was conducted as a supplemental study to the Stage Ia archaeological investigation of the Li Tungsten Corporation Superfund site (Malcolm Pirnie, 1995), located approximately 0.4 miles to the east. The test trenches were excavated as part of the Focussed Feasibility Study (FFS) being conducted for the Captain's Cove study area (see Malcolm Pirnie, 1997). As a result of research conducted during the Li Tungsten Stage Ia investigation, it was determined that the *Glen Cove site*, a recognized Archaic and Woodland Period Native American camp and shell midden (Nassau County Museum Site Number 3), and the *Old Marsh site*, an Archaic Period camp and shell midden (Nassau County Museum Site Number 58), were located in the Captain's Cove study area. Although mid to late twentieth century use of the Captain's Cove study area as a municipal landfill and the partial construction there of a condominium complex were felt to have disturbed the property to some extent, it was considered possible that buried former ground surfaces and features, possibly containing Native American artifacts, existed. Accordingly, prior to the start of the excavations for the FFS and after consultation with United States Environmental Protection Agency (USEPA) personnel, it was determined that archaeological monitoring of the trench excavations was warranted. None of the FFS test trenches were excavated in the immediate vicinity of the *Glen Cove site* or the *Old Marsh site*.

Historic period maps reviewed as part of the Li Tungsten Stage Ia archaeological investigation included the Captain's Cove study area (Malcolm Pirnie, 1995). Analysis of the maps (United States Coast Survey, 1837; Walling, 1859; Malcolm Pirnie, 1995) indicate that much of the Captain's Cove study area was formerly marshland or part of Glen Cove Creek and was partially filled by the early twentieth century. An area of higher ground, however, apparently was located immediately adjacent to a formerly marshy and irregular shoreline of Glen Cove Creek. The *Glen Cove site* was located in the eastern portion of this high ground (Salwen, 1968; see Figures 3 and 4). Its general location is approximately 275 feet southwest of the westernmost condominium shell (see Section 1.2). The *Old Marsh site*, also situated on the high ground overlooking the

former marsh and creek, was located approximately 250 feet east of the *Glen Cove site* (Salwen, 1968; see Section 1.2 and Figures 3 and 4). The westernmost condominium shell is located approximately 110 feet north of the general area of the *Old Marsh site*. It is not known if any deposits associated with these sites remain.

The northernmost portion of the Captain's Cove study area, in the vicinity of Garvies Point Road, formerly may have been fast land, possibly part of an ancient terrace of Glen Cove Creek. The extent to which such fast land (and terraces) extended into the Captain's Cove study area is unknown. The *Muskeeta Cove site* is a recognized Woodland Period Native American shell midden and camp site located approximately 200 yards northeast of the Captain's Cove study area on another apparent ancient terrace of Glen Cove Creek (Patterson, 1956; Salwen, 1968). A number of other Native American sites also have been identified within the vicinity of Glen Cove Creek (Patterson, 1955; see Malcolm Pirnie, 1995).

The purpose of this investigation is to determine whether portions of the Captain's Cove study area can be considered to be archaeologically sensitive for the presence of Native American sites, based on the stratigraphic evidence revealed in the test trenches and on the known locations of the previously identified *Glen Cove* and *Old Marsh* Native American sites.

1.1 Captain's Cove Site History

The Captain's Cove study area formerly was used as a disposal site for dredge materials from Glen Cove Creek from at least the 1930's to the 1960's. From approximately 1971 through the early 1980's, the site was used by the City of Glen Cove as a municipal landfill. Incinerator residues, wastewater treatment plant sludges, rubbish, household and street debris, dredged material and industrial wastes were disposed on the site (Malcolm Pirnie, 1997:2-1). During the period of time that the site was used as a landfill, radioactive waste was accepted from the Li Tungsten Corporation (Malcolm Pirnie, 1997:2-1). The property was purchased by the Glen Cove Development Company from the City of Glen Cove in 1981 and became the object of a redevelopment effort. In 1983, Village Green Reality acquired the property for development as a condominium complex. The shell of two condominium buildings and the foundation of a third building were completed before the discovery of radiological contamination led to the suspension

of further development. Redevelopment efforts were abandoned in the mid-1980's when the New York State Department of Environmental Conservation (NYSDEC) designated the property as a State Superfund site. NYSDEC is statutorily precluded from addressing the radioactive materials present on the property. NYSDEC, therefore, requested, that the USEPA address the radiological contamination while the State addresses the chemical contamination.

1.2 Study Area Description

The Captain's Cove study area consists of approximately 19 acres of relatively level land, including a four-acre wetland, that is bounded on the south by Glen Cove Creek, on the north by Garvies Point Road, on the east by the Glen Cove Anglers Club (a City-owned property), and on the west by a City owned beach (Figure 2). Two poured concrete condominium building shells, the poured foundation for a third condominium, and the remains of a former sales office building are located on the property. Two excavated water retention ponds, which serve to collect surface runoff, border Garvies Point Road. A paved parking lot is located in the northwestern portion of the property. Other areas of disturbance, consisting of open excavations and installed water mains, are present in portions of the property while wooden and concrete piles have been driven into the subsurface over much of the property. The purpose of the wooden and concrete piles was to provide structural support for additional planned condominium buildings. A paved and dirt access road extends most of the length of the property. Construction materials (e.g. concrete pipe, reinforcing rod, door frames), piles of trash, fill and landscaping gravel also are present. Small trees and scrub vegetation characterize most of the property except for its northernmost periphery which is characterized by open grassy fields with some scrub vegetation.

The vicinity of the *Glen Cove site* currently is raised land covered with grass and scrub vegetation overlooking Glen Cove Creek (Figure 3). Support piles and construction debris are located in the area, however, there were no indications of extensive sub-surface disturbance. An undetermined amount of fill probably has been deposited in this area.

The westernmost condominium shell apparently was constructed just north of the *Old Marsh site* (Figure 3). Currently, the identified area consists of raised, relatively level ground covered by grass and scrub vegetation. An undetermined amount of fill apparently has been deposited in the

area to grade the surface. It is not known if any deposits associated with the *Glen Cove* and/or *Old Marsh* sites remain below the fill.

2.0 METHODOLOGY

Seven mechanized test trenches were excavated using a standard tractor-mounted backhoe in locations where radiation surveys had detected above background levels of radioactivity. Test trenches were conducted primarily to investigate the extent of the radiation. Site vegetation was mechanically removed in the immediate vicinity of each test trench.

Excavated test trenches were between 12 and 20 feet in length and between two and four feet in width. The test trenches were excavated in approximately one foot levels with two or more passes of the machine's bucket required to achieve that depth. This excavation methodology allowed the trench to be examined for the presence of artifacts or archaeological features in intervals of 0.5 feet or less. After each one foot increment was excavated, soil sampling was undertaken. After each sampling, the wall profiles and the trench floor were examined and the stratigraphy recorded before trenching resumed.

The test trenches were excavated to various depths depending upon field conditions. At the conclusion of each test trench, a typical section of at least one wall profile was appropriately recorded. None of the excavated layers were screened to detect the presence of cultural materials. As part of the preliminary archaeological sensitivity evaluation, in addition to the test trench data, soil borings logs were also reviewed.

Subsequent to the excavation of the test trenches, the site files located at the Nassau County Natural History Museum at Garvies Point were reviewed. Copies of the files containing excavation data for the *Glen Cove site* and a map showing the approximate location of that site and the *Old Marsh site* were obtained (Figure 4).

3.0 TEST TRENCH STRATIGRAPHY

The stratigraphy encountered in each test trench was basically similar, consisting initially of relatively recently developed surface soils (A and B horizon layers) followed by four to six feet of fill. Items of twentieth century manufacture, some apparently of relatively recent date, were the only artifacts noted in the fill layers. Wetland associated layers which reflect the marsh environment formerly present in the area or other former ground surfaces, possibly associated with former terraces of Glen Cove Creek, were present below the fill in six of the trenches excavated. The excavation in test trench 2 did not exceed the depth of the fill. No artifacts were found to be associated with the wetland-type soils or other ground surface layers. In most of the trenches, sand/gravel layers were encountered beneath the former ground surfaces and wetland-related strata. These are natural layers, probably glacial in origin, characteristic of wetland environments or raised former terrace-like areas.

3.1 Test Trench 1

Test trench 1 (Figures 2 and 5) was oriented roughly east to west and located in the northwestern portion of the Captain's Cove study area near Garvies Point Road. The uppermost 0.2 feet consisted of black sandy silt humus. Below the humus was approximately 5 feet of fill consisting principally of mixed layers of brown, dark brown and gray-brown sandy silt. No clearly defined stratigraphic layers were noted in the portion of the fill revealed in the trench possibly suggesting that it represents a single depositional episode or load. Artifacts of relatively recent manufacture were noted in the fill including items of plastic, wood, fabric/rags and metal. Below the fill was approximately 0.3 feet of dark brown sandy silt that appears to represent a former ground surface. No cultural material was seen in that layer, however, a small quantity of oyster shell was noted. Below the dark brown clayey silt was a layer of yellow-brown sand with pebbles. No cultural material was found to be associated with the sand which apparently represents the natural subsoil in this location. The pebbly yellow sand stratum was only found in test trenches 1 and 5 (see below) and appears to be a terrace-type deposit indicating that such a topographic feature may formerly have characterized the vicinity of these trenches. If so, the former ground surface overlying the sand would have been a former surface of that Glen Cove Creek terrace.

3.2 Test Trench 2

Test trench 2 (Figures 2 and 6) was oriented roughly north to south and located east of test trench 1. The uppermost 0.2 feet of the trench consisted of black sandy silt humus. Beneath the humus was a series of fill layers which extended at least to the base of the test trench, a depth of more than 9 feet. The initial fill stratum was a layer of gray-brown/tan clayey silt with rust-brown clayey silt mottling that ranged from 0.2 - 1.7 feet below the modern surface. Beneath that soil was 0.7 feet of gray clayey silt. At a depth of 2.3 feet was a black sandy silt deposit that extended to 9.1 feet below grade. The black sandy silt fill deposit was found to contain tree limbs, concrete slabs, metal cable, fabric/rags, wooden planks and plastic. Excavation of this trench terminated at a depth of 9.1 feet below grade without the area's naturally occurring subsoil being uncovered. The water table in test trench 2 was at approximately 5.8 feet below the modern grade.

3.3 Test Trench 3

Test trench 3 (Figures 2 and 7) was oriented roughly northeast to southwest and located southwest of test trench 2. The initial stratum revealed in the trench was a dark brown sandy silt humus. Beneath the humus were three fill layers consisting initially of 1.8 feet of medium brown sandy silt. Below that layer was 0.6 feet of gray clayey silt and 1.4 feet of black sandy silt. No artifacts were visible in any of these strata although the black sandy silt layer did contain pieces of tree wood (limbs, twigs, bark, etc.). Beginning at 4 feet beneath the modern grade was an apparently natural wetland-associated deposit consisting of dark brown/black clayey silt which extended to approximately 6.7 feet below grade. Below the wetland related deposit was a naturally occurring deposit of gray/white sand extending to a depth of 8.3 feet. The sand was followed by another natural layer consisting of black sand with gravel which extended to at least the base of the excavation at 10 feet below grade. Neither the gray/white nor black sand deposits appear to be terrace-like surface layers but are more characteristic of wetland type environments. Groundwater was encountered in test trench 3 at approximately 10 feet below grade.

3.4 Test Trench 4

Test trench 4 was oriented roughly north to south and located southwest of test trench 1. Below 0.6 feet of relative recently developed humus and 0.7 feet of dark brown sandy silt B-horizon soil was 3 - 5 feet of fill overlying a natural wetland-associated stratum (Figures 2 and 8). The fill

consisted of an initial 0.7 feet of medium brown sandy silt mixed with gray-brown and dark brown sandy silt followed, at 1.8 feet below grade, by 1.2 feet of yellow brown sand. Below the sand, at a depth of 3 feet, was a sloping stratum consisting of gray sand mixed with dark brown sand and gray/white sandy silt that extended from 3.8 feet to 4.8 feet. Cultural material associated with the fill consisted of items of plastic, garden hose sections, fabric, red brick, ceramics and pieces of plastic tarp.

Below the fill was a naturally appearing wetland-associated deposit consisting of dark gray-black clayey silt extending to approximately 5.5 feet below grade. No cultural material was found to be associated with this layer. Beneath it was an apparently natural deposit of gray/tan sand with pebbles which was excavated to approximately 9 feet below grade.

3.5 Test Trench 5

Humus and an underlying leaching zone of dark brown sandy silt were the initial strata encountered in test trench 5, an east to west oriented excavation located in the easternmost portion of the Captain's Cove study area near Garvies Point Road (Figures 2 and 9). Beginning at a depth of 1.2 feet was a series of three fill layers that extended to approximately 6 feet below grade. The three fill layers consisted of:

- 2.7 feet of dark brown sandy silt with yellow-brown and tan/brown sandy silt mottling extending between 3.0 and 3.8 feet below grade;
- 1.2 feet of mixed dark brown and black clayey silt extending to 5 feet below grade; and
- 1 foot of mottled medium brown clayey silt.

Below the three layers of fill was 0.3 feet of dark brown sandy silt which is similar in color, texture and thickness to the former ground surface seen in test trench 1. The dark brown sandy silt seen in test trench 5 probably is a former ground surface layer associated with a terrace of Glen Cove Creek. Below that layer, at 6.3 feet below grade, was a layer of yellow brown sand with pebbles. The layer and its stratigraphic position beneath the buried former ground surface

are similar to the stratigraphic sequence seen in test trench 1. Excavation in this unit ended at approximately 8 feet below grade. As with the pebbly yellow-brown sand encountered in test trench 1, this layer probably represents a natural terrace deposit,

A portion of a concrete pipe, oriented north to south and approximately 2.5 feet in diameter, extended through test trench 5 at a depth of approximately 6 feet below grade. The pipe extended through the former ground surface and into the underlying natural sand. Other than the pipe and artifacts of relatively recent manufacture seen in the fill layers, no cultural material was noted in test trench 5.

3.6 Test Trench 6

Approximately 8 feet of fill was encountered beneath 0.4 feet of sod and humus in test trench 6, a north to south oriented excavation located southeast of trench 5 (Figure 2 and 10). The fill was composed of three strata consisting initially of approximately 0.6 feet of dark gray/brown silty sand with some tan/brown to yellow-brown silty sand mottling. This layer was underlain by an approximately four feet of yellow/tan/brown sand. Artifacts of relatively recent manufacture (fabric/rags, wine bottles with screw top lips, porcelain tiles, a vinyl record, plastic, wood, etc.) were noted in the first two fill layers. At a depth of approximately 3 feet, the backhoe bucket encountered the top of a corrugated sheet of metal. The portion of the metal sheet exposed was vertically oriented, extending downward at least 1.3 feet. The metal sheet extended across the width of the unit, apparently extending past the edges of the trench, and running roughly parallel with the shoreline. Although the function of the metal sheet could not be definitely determined, it probably was part of a former shoreline bulkhead or fill retaining structure. The metal sheet is located approximately 20 feet north of the present Glen Cove Creek shoreline which is now lined with corrugated metal sheeting similar to that encountered in test trench 1.

Due to the presence of the corrugated metal extending across the width of the trench, backhoe excavation could not continue at that location. Accordingly, the location of the trench was shifted approximately 3 feet to the north where the excavation continued. Soils were mechanically removed to the base of the yellow/tan/brown sand at approximately 5 feet below grade. At that depth another fill layer consisting of dark brown silty clay with sand was encountered that

extended to approximately 5.7 feet below grade. Red brick, fabric/rags and wood were noted in that stratum. Beneath it was a layer of black silty clay which extended to at least 8 feet below grade. No cultural material was found to be associated with that stratum which probably represents a natural wetland deposit. Groundwater was encountered in test trench 6 at approximately 5.5 feet below the modern surface.

3.7 Test Trench 7

Approximately 0.3 feet of dark brown sandy silt humus was the initial stratum in test trench 7, a north to south oriented excavation located south of test trench 4 (Figures 2 and 11). Below the humus was fill extending in depth to approximately 4 feet below the modern grade. The initial fill layer consisted of approximately 0.4 feet of dark brown/tan sandy silt. Below this stratum was 1.3 feet of dark brown sandy silt containing large rocks and pebbles followed by 1.3 feet of yellow/tan/brown sandy silt. Under the yellow/tan/brown sandy silt was approximately 2.5 feet of dark brown/black clayey silt, which apparently is a wetland-related deposit.

Excavation ceased in test trench 7 at approximately 6 feet below grade without penetrating the dark brown/black clayey silt layer.

4.0 REVIEW OF SOIL BORING LOGS

A review of 28 soil boring logs drilled within the Captain's Cove study area was consistent with the stratigraphic profiles revealed in the seven test trenches described above. All of the soil borings apparently encountered fill, a former ground surface and/or wetland-associated strata and natural subsoil.

5.0 INTERPRETATION OF TEST TRENCH DATA

The results of the test trench excavations indicate that the northernmost portion of the Captain's Cove study area probably was the location of a buried terrace of Glen Cove Creek which extended southward into the study area from Garvies Point Road for less than 125 feet. The two test trenches (1 and 5) excavated in this area encountered similar sub-fill stratigraphy that was

different from that seen in the other tests which were all located further to the south and characterized by more wetland like sub-fill layers. A buried organic layer that probably represents the former ground surface of the terrace was encountered in test trenches 1 and 5 below approximately five feet of fill. Below the surface in both trenches was a cobble-filled glacial sand characteristic of river terrace deposits. It is not known if the buried surface layer contains Native American artifacts since it was not manually tested. The *Muskeeta Cove* site, however, is located on a similar terrace northeast of the Captain's Cove study area.

A large wetland which was filled mainly during the mid to late twentieth century formerly was located south of the terrace. Stratigraphic indications of that wetland were encountered in the remaining test trenches (2, 3, 4, 6 and 7). High ground apparently bordered the wetland on the south, separating it from Glen Cove Creek. No test trenches were excavated in that area, parts of which are the reported location of the *Glen Cove* and *Old Marsh* sites.

The topographic interpretation based on the test trench stratigraphy presented herein is consistent with the former topography of the Captain's Cove study area as indicated by the Historic period maps reviewed during the Li Tungsten Stage Ia investigation (see Malcolm Pirnie, 1995).

6.0 CONCLUSIONS AND RECOMMENDATIONS

Three portions of the Captain's Cove study area are considered sensitive for the presence of Native American sites. They include:

- the northernmost portion of the study area, away from the locations disturbed by construction of two water retention ponds (Figure 3:I). Test trenches excavated in the area suggest that a buried ground surface possibly associated with a former terrace of Glen Cove Creek is present beneath fill and extends southward from Garvies Point Road for approximately 125 feet. The terrace would have been an attractive location for Native American campsites oriented toward the exploitation of subsistence resources associated with Glen Cove Creek or for other purposes. Recorded Native American sites have been identified on similar terraces in the

Glen Cove Creek vicinity. It is possible that the buried ground surface layer contains indications of such aboriginal campsites.

- the vicinity of the previously identified *Glen Cove site* (Figure 3:II). The site, located on high ground overlooking Glen Cove Creek to the south and formerly overlooking the large wetland to the north, reportedly contains Late Archaic and Woodland period components and shell middens. Portions of the *Glen Cove site* were excavated in 1967 (Salwen, 1968) but reportedly additional undisturbed portions remained unexcavated at that time. Whether portions of the site remain intact is unknown. An examination of the ground surface in the site vicinity did not reveal any indications of extensive disturbance but suggested that the area had been filled. The extent of the fill is unknown. No test trenches were excavated in the vicinity of the *Glen Cove site*.
- the vicinity of the previously identified *Old Marsh site* (Figure 3:III). The *Old Marsh site*, located on high ground overlooking Glen Cove Creek to the south and formerly overlooking the large wetland to the north, reportedly contains an Archaic period component and shell midden. Portions of the *Old Marsh site* were excavated in the 1960's (Salwen, 1968) but reportedly additional undisturbed portions remained unexcavated at that time. The westernmost condominium shell currently is located approximately 110 feet north of the general area. The impact that the construction of that building had on the *Old Marsh site* is unknown. Whether any portions of the *Old Marsh site* remains intact below relatively recently deposited fill also is unknown. No test trenches were excavated in the vicinity of the *Old Marsh site*.

The remaining portions of the Captain's Cove study area formerly consisted primarily of wetlands that were filled mainly during the mid to late-twentieth century. It is considered unlikely that Native American deposits would have developed in those locations.

A review of the Historic Period maps reviewed during the Li Tungsten Stage Ia investigation (Malcolm Pirnie, 1995) indicated that pre-twentieth century dwellings were not located within the Captain's Cove study area. Accordingly, no portion of the Captain's Cove study area is considered to be sensitive for the presence of Historic Period archaeological resources.

If it is determined at the completion of the FFS that remedial activities resulting in extensive ground disturbance are necessary at Captain's Cove, it is recommended that a Stage Ib investigation (i.e. sub-surface testing) be conducted in the archaeologically sensitive areas that will be disturbed as a result of those activities. Sub-surface testing will determine whether any possibly significant archaeological resources are present in those areas. The scope of those investigations will be determined after the results of the FFS are complete and after consultation with USEPA personnel.

7.0 REFERENCES CITED

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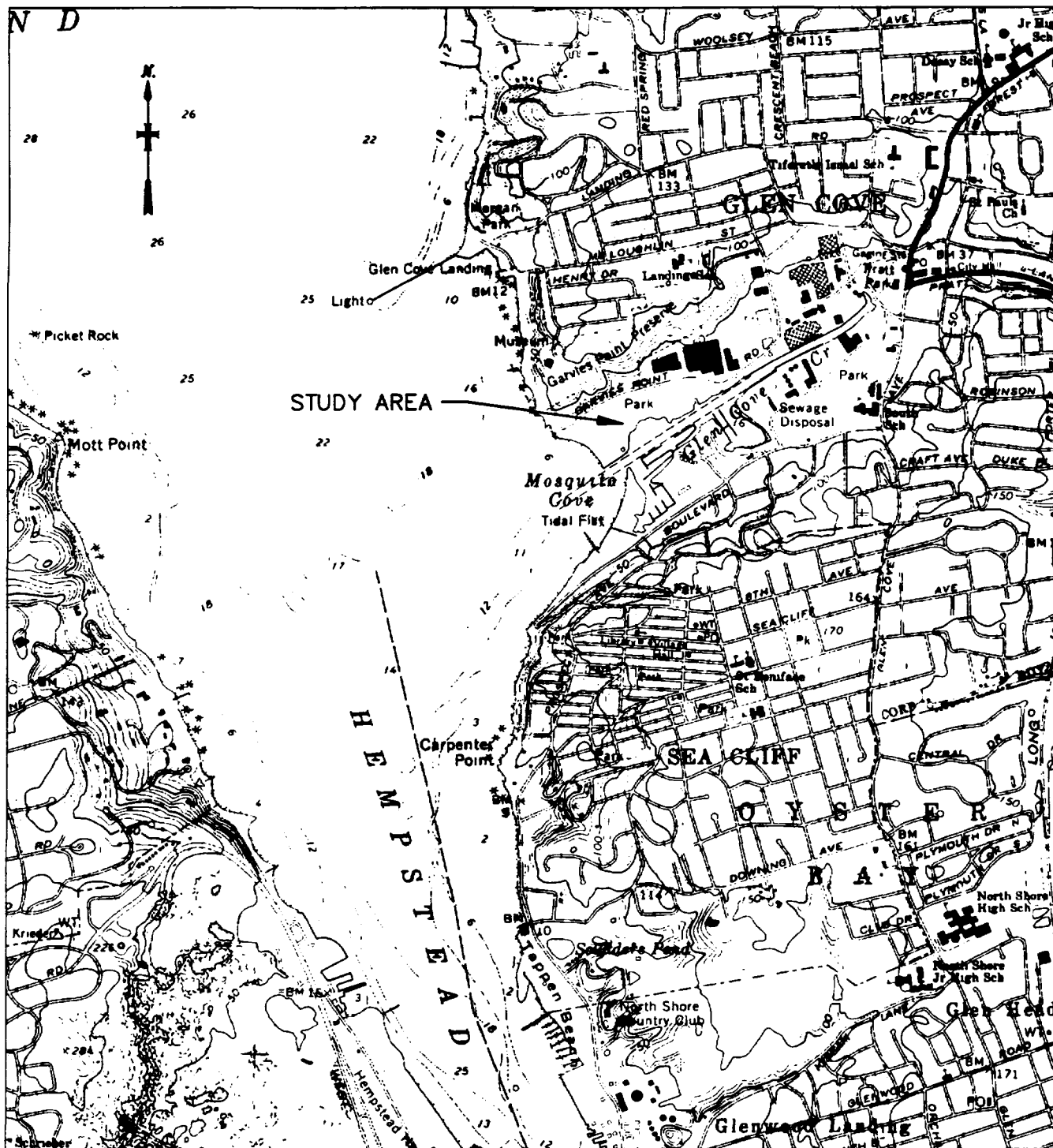
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BASE MAP SOURCE:
UNITED STATES GEOLOGICAL SURVEY 1979

SCALE OF ORIGINAL:
1:24,000

TITLE:

CAPTAIN'S COVE STUDY AREA LOCATION

DATE:

AUGUST 1998

FIGURE NO.:

FIGURE 1

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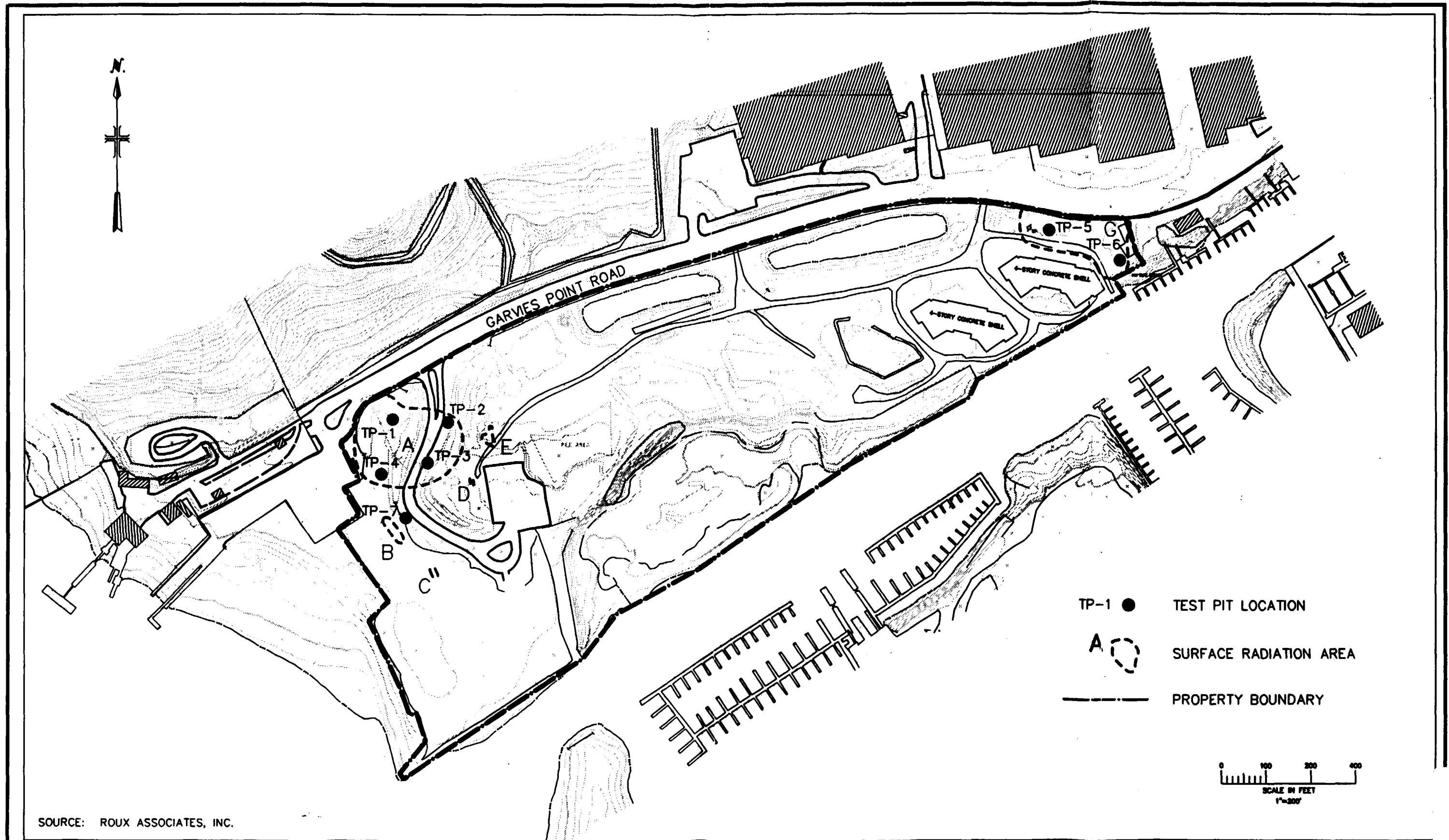
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GLEN COVE, NEW YORK
USEPA REGION II ARCS
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CAPTAIN'S COVE ADJUNCT FOCUSED FEASIBILITY STUDY
GLEN COVE, NEW YORK
USEPA REGION II ARCS
CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

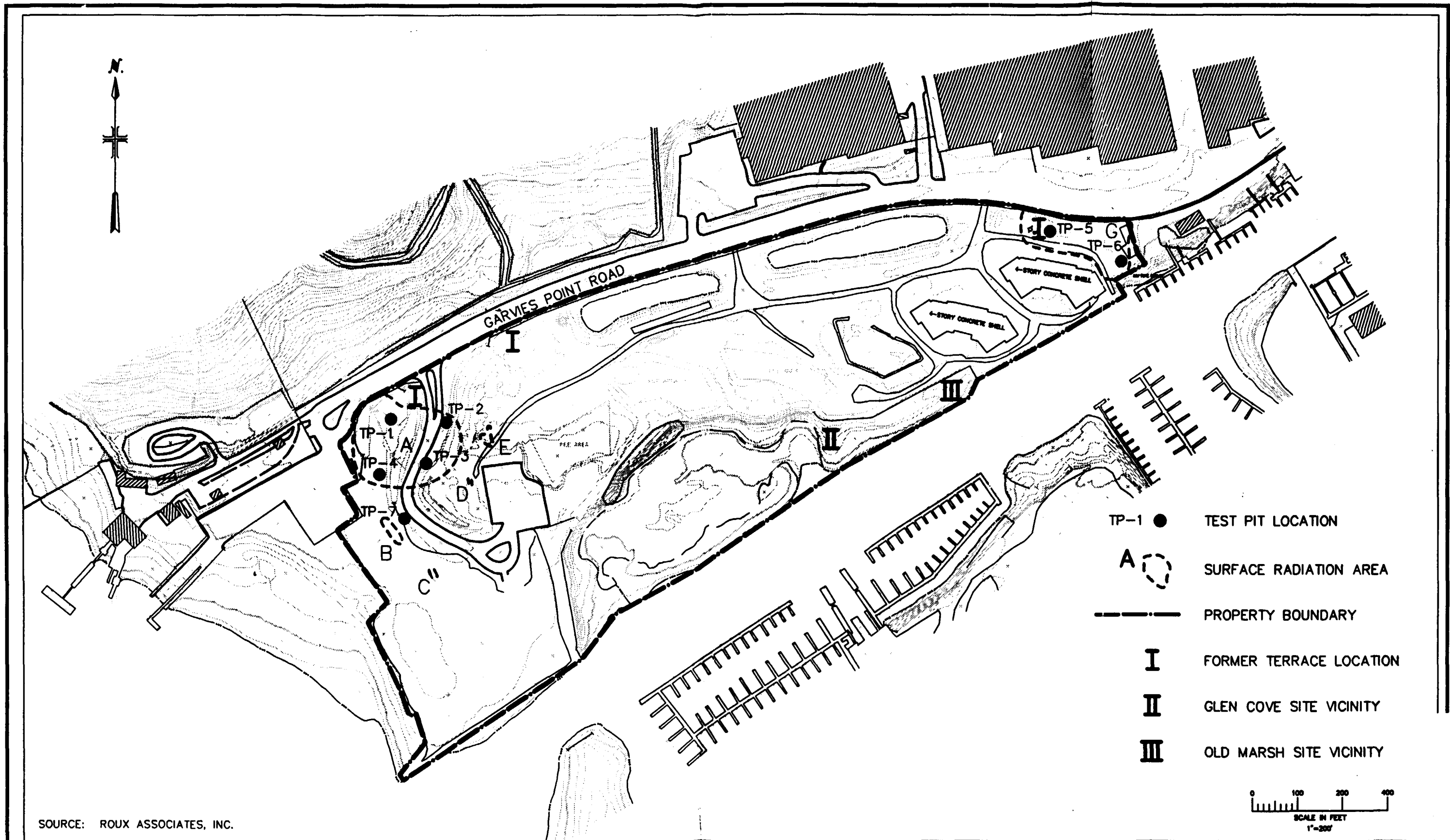
DATE: AUGUST 1998

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FIGURE 2

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CAPTAIN'S COVE ADJUNCT FOCUSED FEASIBILITY STUDY
GLEN COVE, NEW YORK
USEPA REGION II ARCS
CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

DATE: AUGUST 1998

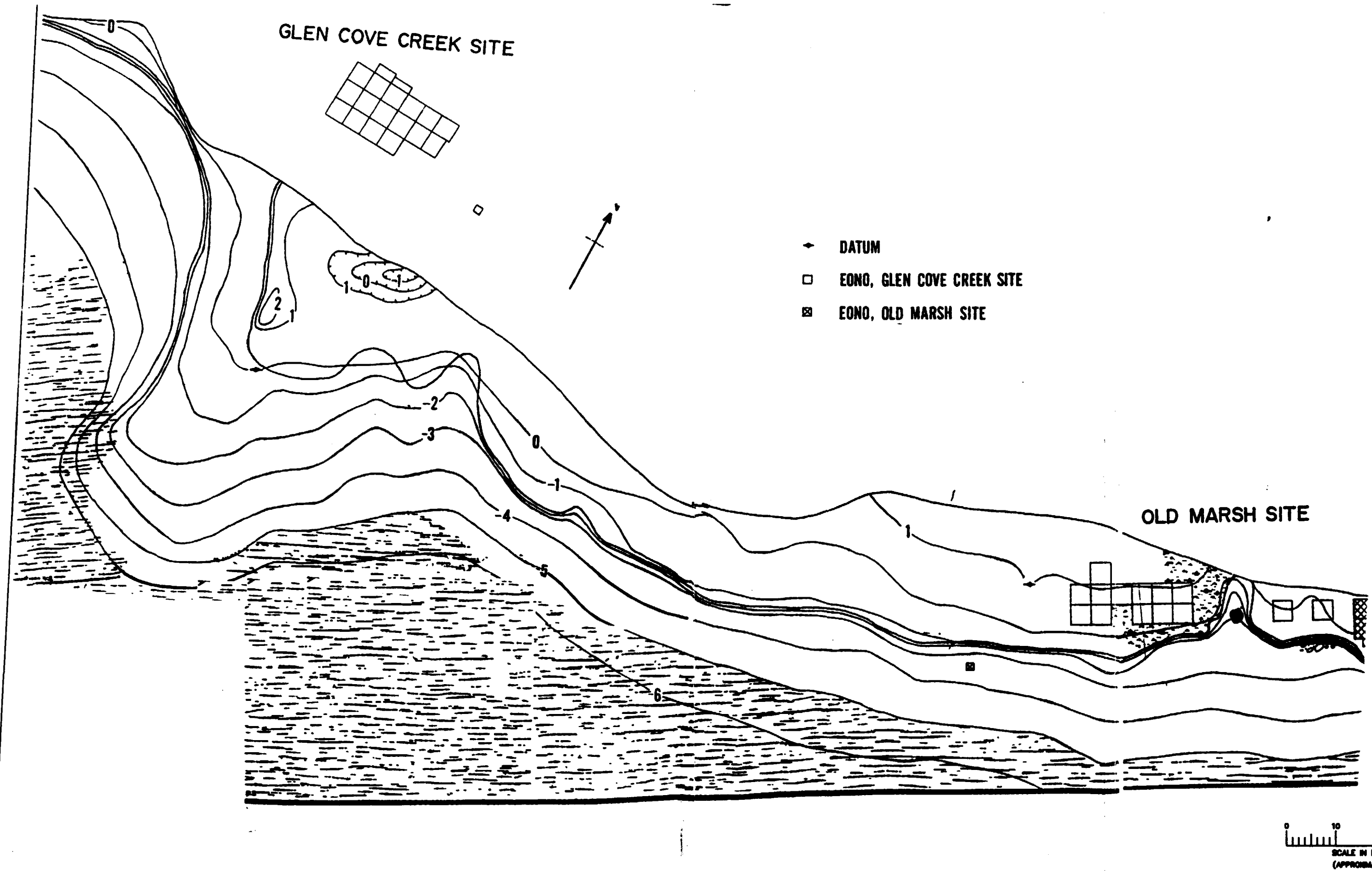
ARCHEOLOGICALLY SENSITIVE LOCATIONS
WITHIN THE CAPTAIN'S COVE STUDY AREA

PROJECT NO.: 80012023

FIGURE 3

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CAPTAIN'S COVE ADJUNCT FOCUSSED FEASIBILITY STUDY
GLEN COVE, NEW YORK
USEPA REGION II ARCS
CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

DATE: AUGUST 1998

GLEN COVE SITE AND
OLD MARSH SITE EXCAVATION MAP

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FIGURE 4

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TEST TRENCH 1 - SOUTH PROFILE

DATE:

AUGUST 1998

FIGURE NO.:

FIGURE 5

**MALCOLM
PIRNIE**



CAPTAIN'S COVE ADJUNCT FOCUSSED FEASIBILITY STUDY
GLEN COVE, NEW YORK

USEPA REGION II ARCS

CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

400248

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TITLE:

TEST TRENCH 2 - EAST PROFILE

DATE:

AUGUST 1998

FIGURE NO.:

FIGURE 6

7308 ADMIN

**MALCOLM
PIRNIE**

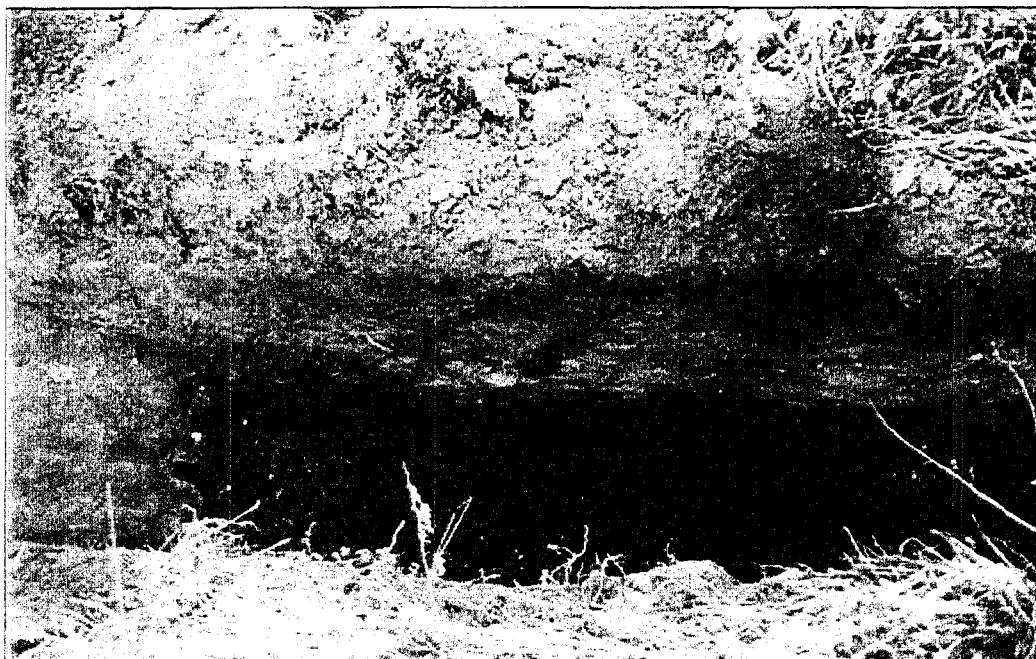


CAPTAIN'S COVE ADJUNCT FOCUSED FEASIBILITY STUDY
GLEN COVE, NEW YORK

USEPA REGION II ARCS

CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

400249



TITLE:

TEST TRENCH 3 - EAST PROFILE

DATE:

AUGUST 1998

FIGURE NO.:

FIGURE 7

**MALCOLM
PIRNIE**



CAPTAIN'S COVE ADJUNCT FOCUSED FEASIBILITY STUDY
GLEN COVE, NEW YORK
USEPA REGION II ARCS
CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

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7308 ADMIN



TITLE:

TEST TRENCH 4- EAST PROFILE

DATE:

AUGUST 1998

FIGURE NO.:

FIGURE 8

**MALCOLM
PIRNIE**



CAPTAIN'S COVE ADJUNCT FOCUSED FEASIBILITY STUDY
GLEN COVE, NEW YORK

USEPA REGION II ARCS

CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

400251

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TITLE:

TEST TRENCH 5 - SOUTH PROFILE

DATE:

AUGUST 1998

FIGURE NO.:

FIGURE 9

7308 ADMIN

**MALCOLM
PIRNIE**



CAPTAIN'S COVE ADJUNCT FOCUSED FEASIBILITY STUDY
GLEN COVE, NEW YORK
USEPA REGION II ARCS
CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

400252

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7308 ADMIN



TITLE:

TEST TRENCH 6 - EAST PROFILE

DATE:

AUGUST 1998

FIGURE NO.:

FIGURE 10

**MALCOLM
PIRNIE**



CAPTAIN'S COVE ADJUNCT FOCUSSED FEASIBILITY STUDY
GLEN COVE, NEW YORK

USEPA REGION II ARCS

CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L

400253



TITLE:

TEST TRENCH 7 - EAST PROFILE

DATE:

AUGUST 1998

FIGURE NO.:

FIGURE 11

**MALCOLM
PIRNIE**



CAPTAIN'S COVE ADJUNCT FOCUSED FEASIBILITY STUDY
GLEN COVE, NEW YORK

USEPA REGION II ARCS

CONTRACT NO. 68-W9-0051; W.A. NO. 025-2L4L